



PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application of

Docket No: Q88664

Takenori OSADA, et al.

Appln. No.: 10/540,514

Group Art Unit: Unassigned

Confirmation No.: Unassigned

Examiner: Unassigned

Filed: June 23, 2005

For: HIGH ELECTRON MOBILITY EPITAXIAL SUBSTRATE

**INFORMATION DISCLOSURE STATEMENT**  
**UNDER 37 C.F.R. §§ 1.97 and 1.98**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

In accordance with the duty of disclosure under 37 C.F.R. § 1.56, Applicant hereby notifies the U.S. Patent and Trademark Office of the documents which are listed on the attached PTO/SB/08 A & B (modified) form and/or listed herein and which the Examiner may deem material to patentability of the claims of the above-identified application.

1. Feng Zhao et al., "Hall and photoluminescence studies of effects of the thickness of an additional  $\text{In}_{0.3}\text{Ga}_{0.85}\text{As}/\text{Al}_{0.25}\text{Ga}_{0.75}\text{As}/\text{GaAs}$  high electron mobility transistors", *Materials Science in Semiconductor Processing*, Vol. 5, 2000, pp. 23-26.
2. JP 6-163599 published June 10, 1994, to NEC Corp., with English Abstract.
3. U. Strauss et al., "Carrier mobilities in graded  $\text{In}_x\text{Ga}_{1-x}\text{As}/\text{Al}_{0.2}\text{Ga}_{0.8}\text{As}$  quantum wells for high electron mobility transistors", *J. Appl. Phys.*, Vol. 80, No. 1, July 1, 1996, pp. 322-325.
4. JP 6-84959 published March 25, 1994, to Fujitsu Ltd., with English Abstract.
5. JP 2001-210819 published August 3, 2001, to Hitachi Cable Ltd., with English Abstract.
6. J.W. Matthews et al., "Defects in Epitaxial Multilayers", *Journal of Crystal Growth*, Vol. 27, 1974, pp. 118-125.

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INFORMATION DISCLOSURE STATEMENT

7. J.W. Matthews et al., "Defects in Epitaxial Multilayers", *Journal of Crystal Growth*, Vol. 32, 1976, pp. 265-273.
8. JP 6-21106 published January 28, 1994, to Hitachi Cable Ltd., with English Abstract.
9. JP No. 2708863 issued October 17, 1997, to Sanyo Electric Co., Ltd., with English Abstract.

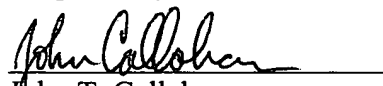
One copy of each of the listed documents is submitted herewith.

The present Information Disclosure Statement is being filed: (1) No later than three months from the application's filing date; (2) Before the mailing date of the first Office Action on the merits (whichever is later); or (3) Before the mailing date of the first Office Action after filing a request for continued examination (RCE) under §1.114, and therefore, no Statement under 37 C.F.R. § 1.97(e) or fee under 37 C.F.R. § 1.17(p) is required.

The submission of the listed documents is not intended as an admission that any such document constitutes prior art against the claims of the present application. Applicant does not waive any right to take any action that would be appropriate to antedate or otherwise remove any listed document as a competent reference against the claims of the present application.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account. A duplicate copy of this paper is attached.

Respectfully submitted,

  
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WASHINGTON OFFICE

**23373**

CUSTOMER NUMBER

Date: September 20, 2005

Substitute for Form 1449 A & B/PTO		complete if Known	
<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> (use as many sheets as necessary)		Application Number	10/540,514
		Confirmation Number	Unassigned
		Filing Date	June 23, 2005
		First Named Inventor	Takenori OSADA
		Art Unit	Unassigned
		Examiner Name	Unassigned
Sheet 1 of 1	Attorney Docket Number	Q88664	

## U.S. PATENT DOCUMENTS

Examiner Initials*	Cite No. <sup>1</sup>	Document Number		Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document
		Number	Kind Code <sup>2</sup> (if known)		
		US			
		US			
		US			
		US			
		US			

## FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No. <sup>1</sup>	Foreign Patent Document			Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Translation <sup>6</sup>
		Country Code <sup>3</sup>	Number <sup>4</sup>	Kind Code <sup>5</sup> (if known)			
		JP	06-163599	A	06-10-1994	NEC Corp.	Abstract
		JP	06-84959	A	03-25-1994	Fujitsu Ltd.	Abstract
		JP	2001-210819	A	08-03-2001	Hitachi Cable Ltd.	Abstract
		JP	06-21106	A	01-28-1994	Hitachi Cable Ltd.	Abstract
		JP	2708863	B2	10-17-1997	Sanyo Electric Co., Ltd.	Abstract

## NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city, and/or country where published.	Translation <sup>6</sup>
		Feng Zhao et al., "Hall and photoluminescence studies of effects of the thickness of an additional In <sub>0.3</sub> Ga <sub>0.85</sub> As/Al <sub>0.25</sub> Ga <sub>0.75</sub> As/GaAs high electron mobility transistors", <i>Materials Science in Semiconductor Processing</i> , Vol. 5, 2000, pp. 23-26	
		U. Strauss et al., "Carrier mobilities in graded In <sub>x</sub> Ga <sub>1-x</sub> As/Al <sub>0.2</sub> Ga <sub>0.8</sub> As quantum wells for high electron mobility transistors", <i>J. Appl. Phys.</i> , Vol. 80, No. 1, July 1, 1996, pp. 322-325	
		J.W. Matthews et al., "Defects in Epitaxial Multilayers", <i>Journal of Crystal Growth</i> , Vol. 27, 1974, pp. 118-125	
		J.W. Matthews et al., "Defects in Epitaxial Multilayers", <i>Journal of Crystal Growth</i> , Vol. 32, 1976, pp. 265-273	

Examiner Signature	Date Considered
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\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup>Applicant's unique citation designation number (optional). <sup>2</sup>See Kind Codes of USPTO Patent Documents at www.uspto.gov, MPEP 901.04 or in the comment box of this document. <sup>3</sup>Enter Office that issued the document, by the two-letter code (WIPO Standard ST. 3). <sup>4</sup>For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup>Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup>Applicant is to indicate here if English language Translation is attached.